

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

1-46. (Cancelled)

47. (Withdrawn) A method for transferring a liquid between a first set of reservoirs and a second set of reservoirs via a plurality of capillary tubes each having a first end positioned in a corresponding one of said first set of reservoirs and a second end positioned in or above a corresponding one of said second set of reservoirs, the method comprising:

completely filling said capillary tubes with liquid contained in each said corresponding first set of reservoirs; and

subsequent to said complete filling of all said capillary tubes, dispensing the liquid contained in each of said capillary tubes into said corresponding one of said second set of reservoirs.

48. (Withdrawn) A method of claim 47, wherein completely filling said capillary tubes comprises:

applying a differential pressure across said capillary tubes sufficient to cause the liquid contained in the corresponding first set of reservoirs to travel through said corresponding capillary tubes;

freezing the liquid in a region of each said capillary tube that is adjacent to said second end of said capillary tubes;

ceasing said application of said differential pressure;

melting said frozen liquid in said region of each said capillary tube; and

reapplying said differential pressure to dispense into said corresponding set of second reservoirs said liquid contained in each said capillary tube.

49. (Withdrawn) The method of claim 48, wherein freezing the liquid in the capillary tubes comprises:

cooling a region of each said capillary tube that is adjacent to said second end of said capillary tube to a temperature below the freezing point of the liquid in said capillary tubes.

50. (Withdrawn) The method of claim 48, wherein melting said frozen liquid contained in said region of said capillary tubes comprises:

elevating said temperature in said region of each of said capillary tubes to melt said frozen liquid.

51. (Withdrawn) The method of claim 47, wherein completely filling said capillary tubes comprises:

filling the liquid contained in each of said first set of reservoirs through each of the capillary tubes;

introducing into each of the capillary tubes a bolus of a fluid having a melting point that is higher than that of the liquid contained in said corresponding first set of reservoirs; and

solidifying said bolus in a region of each said capillary tube adjacent said second end of each said capillary tube.

52. (Withdrawn) The method of claim 51, wherein filling said capillary tubes further comprises:

controlling the temperature of each said capillary tube to allow said boli to travel through said capillary tubes to be disposed at a specific location within said capillary tubes.

53. (Withdrawn) The method of claim 52, wherein the higher melting point fluid comprises one or more of the group consisting of:

a polymer substance;
a wax substance; and
a immiscible inert fluid.

54. (Withdrawn) The method of claim 51, wherein dispensing the liquid contained in each of said capillary tubes into said corresponding one of said second set of reservoirs comprises:

controlling the temperature of each said specific location of said capillary tubes to allow said bolus to travel from said specific location within said capillary tube to separate from said capillary tube.

55. (Withdrawn) The method of claim 51, wherein the temperature is controlled by at least one of the group consisting of a Peltier cooling/heating system, a resistive heating system, a cryogenic fluid flow system and an air flow system.

56. (New) A liquid-handling system for transferring liquid comprising:

first container having a liquid and encased in a pressure housing;
second container having a plurality of reservoirs;
third container, wherein the first, second and third containers are different; and
capillary array comprising:
a plurality of capillary tubes arranged in pairs such that a first capillary tube and a second capillary tube each have a distal end positioned in or above a reservoir of the plurality of reservoirs, the first capillary tube having a proximal end positioned in the first container and the second capillary tube having a proximal end positioned in the third container; and
a liquid stop mechanism disposed adjacent to the distal end of the plurality of capillary tubes.

57. (New) The liquid-handling system of claim 56, wherein the pressure housing is configured to cause liquid contained in the first container to be transferred through the capillary array to the second container.

58. (New) The liquid-handling system of claim 56, wherein said liquid stop mechanism comprises a cooling means to create a plug using the liquid transferred and a heating means to release the plug.

59. (New) The liquid-handling system of claim 58, wherein the cooling means comprises one or more of the group consisting of: a Peltier cooling system, a cryogenic fluid flow system, liquid nitrogen, liquid air, liquid helium, chilled gases, ice, and solid carbon dioxide.

60. (New) The liquid-handling system of claim 58, wherein the heating means comprises one or more of the group consisting of: a Peltier heating system, resistive heating systems, air flow systems, and hot water.

61. (New) The liquid-handling system of claim 56, wherein the numbers of pairs of capillary tubes is equal to the number of the plurality of reservoirs.

62. (New) The liquid-handling system of claim 56, wherein the plurality of reservoirs in the second container is arranged in a radial configuration.

63. (New) The liquid-handling system of claim 56, wherein the third container is a waste container.

64. (New) The liquid-handling system of claim 56, wherein the second capillary tube removes liquid in the reservoir using a vacuum chamber.

65. (New) The liquid-handling system of claim 64, wherein the removal by the second capillary tube occurs simultaneously with the transfer by the first capillary tube.